THE TREATMENT OF URETHRAL STRICTURE BY WHEELHOUSE'S METHOD.

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TO gain access to a bladder, by means of a perineal section, when a stricture of the urethra exists, impassable to any variety of catheter or guide, is an operation which a distinguished surgeon of a former generation thought should be commenced very early in the morning of a long summer's day. Without doubt the attempt to lay bare the contracted portion of the urethra, of penetrating it, dividing the constriction and relieving the bladder has often proved wearisome, and not infrequently has ended in surgical failure.

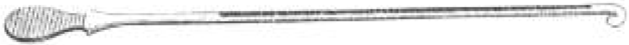

FIG. 1.—WHEELHOUSE'S STAFF.

In the *British Medical Journal* for June 24th, 1876, Mr. Wheelhouse, of Leeds, advocated a method which has proved so useful that it is known in England as "Wheelhouse's Operation."

The principle of the proceeding is to lay open the urethra from the perineum *above* the stricture; to pass an ordinary silver probe, or a probe pointed director through the constriction into the bladder, thus securing a guide for the thorough division of the stricture with a bistoury, and subsequently for the passage of a full sized catheter into the bladder. To attain this most satisfactorily a specially designed straight steel staff (fig. I) is employed. This instrument is 12 inches long, terminating in a button like end and grooved on its under surface for 6 inches; the groove finishes half an inch above the button.

The staff having been inserted into the urethra as far as it will go, that is, down to the stricture, care being exercised that it is not forced into a false passage, the perineum is incised in the middle line, from a point just above the knob on the staff to the outer edge of the anal sphincter, and a dissection is made in the middle line down to the urethra. The normal canal is then opened at the point where the groove in the staff ends, and its edges secured by two pairs of acupressure forceps, that is one on each side. The staff is then turned round and slightly withdrawn, so that the urethra is gently hooked upwards. (Fig. 2.)

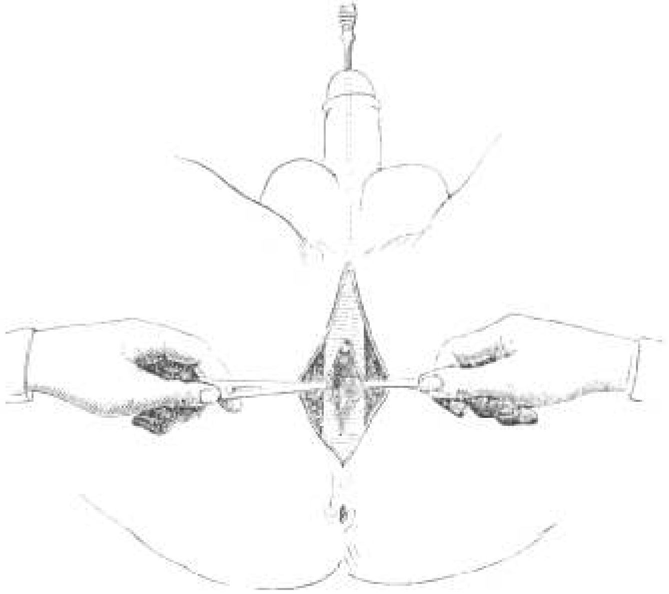

FIG. 2.—WHEELHOUSE'S OPERATION.

The entrance to the stricture now lies immediately below the portion of the canal that has been opened. An ordinary silver probe, or a probe pointed director, is carefully insinuated, generally with some difficulty, through the stricture into the bladder. Personally it has been found more advantageous to employ a small silver probe, as it is more easily coaxed through the stricture. When this has reached the bladder, by its side is passed a flat director (Fig. 3) and the probe is withdrawn.

FIG. 3.—THE FLAT DIRECTOR.

Whichever instrument be employed, when the director has certainly entered the bladder, it is turned with its groove downward toward the anus, and the whole length of the stricture is divided with a probe pointed bistoury. This having been accomplished, Mr. Wheelhouse advocates the introduction of a probe-pointed gorget from the perineum into the bladder, and a full sized catheter is passed from the meatus and readily guided along this into the interior of the organ. If a flat director, such as is depicted, be employed the gorget may be dispensed with, for when the stricture has been thoroughly divided no difficulty will be experienced in guiding a silver catheter along its groove into the bladder. I usually employ a No. 10 (English) which is fastened in and allowed to remain *in situ* for four days. Should the stricture be a very long one, and difficulty experienced in passing a probe through its entire length, the division should be effected piecemeal until the whole of the constricted channel has been laid open. The newly made wound is then carefully cleansed with a weak carbolic or a saturated solution of boracic acid lotion, all visible bleeding points secured, and a double fold of lint, which has been soaked in boracic acid and glycerine (1 in 4), applied. Over this a wood wool pad, or a flat sponge, and the whole securely fixed to the perineum by means of a T-bandage. The administration of a one-half grain morphia suppository completes the operation. When the patient has been placed in bed, the urine can either be drawn off at an interval of two or three hours by removing the stylet from the catheter, or else the bladder may be kept constantly drained by the aid of a long piece of elastic tubing conveying the water to a vessel placed beneath the bed. The subsequent treatment consists in irrigation of the perineal wound twice daily with a saturated solution of boracic acid, the free use of iodoform powder, and a dressing of boracic glycerine. It has been found better to avoid carbolic acid preparations, as they are apt to cause irritation and even sloughing of the skin of the scrotum. The catheter is to be removed on the fourth day, and as the perineal wound rapidly contracts, it is practically healed by the fourth week.

Four days after the withdrawal of the catheter, a full sized instrument, No. 11 or 12 (English) is passed into the bladder from the meatus, and this is repeated twice weekly until the patient is ready to leave the hospital. Before actually doing so a No. 14 (English) bougie is passed, and instruction is given to the patient, in order that he himself may be able to insert a No 10 at least once weekly.

Very often in these long standing urethral strictures the surgeon has to contend with pathological changes in the bladder, ureter or kidney pelvis. A rise of temperature, even up to 102° F.,after the operation must not, therefore, be wondered at: the presence of the catheter acts doubtless as an excitant. Should temperature remain persistently high, it is my custom to withdraw the catheter on the third day. At one time large doses of quinine were administered to counteract the hyperpyrexia; now I am content with the free exhibition of bland liquids, such as soda water and milk, barley water, etc., so that the bladder is kept well flushed. If the urine be very fetid, the bladder is additionally washed out once or twice a day through the catheter, with a warm saturated solution of boracic acid, until the time arrives for the withdrawal of the instrument; till then a milk diet is rigorously enforced.

COMPLICATIONS SUBSEQUENT TO OPERATION.

The following have been met with:

I. Secondary Hæmorrhage.

This has happened on five occasions in a series of 37 cases; all occurred within 24 hours of the completion of the operation. In every instance the stricture was long and dense, extending to the bulbous portion of the urethra. At the time of the operation a free general ooze may be looked for, especially when the stricture is of long standing, but, as a rule, the pressure exerted by a flat sponge and a T-bandage is sufficient to prevent excessive after-bleeding. With every patient, however, care must be exercised by the operator to secure all visible bleeding points and not to apply a dressing until staunching is complete. Should secondary hæmorrhage occur, the wound is best plugged by long strips of dry lint, after it has been satisfactorily demonstrated that no distinct arteriole is unsecured.

II. Rigors.

One or more were frequently met with during the after-treatment of these cases, but not in any of the patients in whom an unopened abscess existed at the time of operation. A shivering fit, more or less intense, was common at the first micturition after withdrawal of the catheter, this being attributable to the urine, probably ammoniacal, coming into contact with the newly made wound. In such instances temperature was only temporarily elevated, and the occurrence appeared to be most constant in neurotic subjects. A 10 grain dose of quinine, administered before the first micturition, did not appear to exert any beneficial influence.

III. Fistula at the Root of Penis.

This was noted on one occasion, the patient being a man, æt. 44, rather cachetic, and with a dense stricture, commencing in the spongy portion of the urethra, just below the point of junction of the penis and scrotum, and extending to the neighborhood of the bulb. It appeared on the third day after the operation, and was doubtless due to the pressure of the silver catheter. The patient left the hospital at the earliest possible date, with the opening nearly closed, but after resuming his every day occupation, healing was arrested, and at the end of four months he had to return to the hospital, in order that further operative measures might be resorted to for closing the small opening.

IV. *Perforation of Bladder by the Catheter.*

This patient was a man, æt. 42, with a history of long standing stricture and several fistulous openings in the perineum, through which the major portion of the urine was voided. The operation was performed on July 14, 1885, and death occurred on July 22. The extract from the hospital pathologist's record, regarding the condition of the urinary organs, is as follows: "*Kidneys.* Capsules thickened and adherent, with granular underlying surface. Cortex very narrow; one subcapsular abscess. No pyelitis. *Ureters* not dilated. *Bladder* contracted and empty; surface of mucous membrane deeply congested and red with submucous hæmorrhage and slight ulceration. At the junction of base and posterior surface, nearly in the middle line, but slightly inclined to the right, was an opening leading into a sacculus as large as the end of the thumb, and at the top of this an ulcer, the size of a three penny piece, perforating the coats of the bladder and leading by an oblique passage directly into the peritoneal cavity. Its edges were pale and sloughy and its opening into the peritoneum surrounded by yellow lymph. There was general purulent peritonitis, most intense in the pelvis, and the coils of intestine were glued to each other by lymph; one coil was adherent to the bladder. In the cavity of the pelvis were two ounces of purulent fluid."

From the standpoint of a practical surgeon this case must be regarded as unusually exceptional.

Cases.

Taking the record of hospital practice for 10 years, 37 patients have been subjected to operation by Wheelhouse's operation. Their ages varied from 25 to 74.

Perineal fistulæ existed in 12, unopened perineal abscess in 4, extravasation of urine in 4.

The deaths were seven in number. Three fatalities occurred in cases in which extravasation had preceded operation; two were from septicemia, the third from exhaustion. Their respective ages were 67 (18 days after operation); 36 (9 days after operation); 28 (second day after operation).

In the fourth case death took place on the tenth day from pyemia, the patient being 74 years of age. The right knee-joint contained sero-purulent fluid. The prostate was enlarged. The bladder, in a state of chronic cystitis, was hypertrophied and sacculated. The ureters were dilated. Both kidneys were cirrhotic.

The fifth death was due to peritonitis following perforation of the bladder (details recorded previously).

In two instances no post mortem examination could be obtained. One died, æt. 33, of chronic septicemia ten weeks after the operation; the other, æt. 41, on the second day.

Recurrence of Contraction After Operation.

This in a great measure will depend upon the patient. With very little care a stricture may be kept well dilated for a long term of years, and, for ought I know to the contrary, for a life time.

When no precautions are adopted, I am satisfied that narrowing of the urethra takes places much more slowly after a free external division than after any other means of treatment. Personally, in one case only, have I been obliged to resort to perineal section a second time. The patient, J. N., æt. 44, had Wheelhouse's operation performed in the early part of 1883, for a very dense stricture, complicated with perineal fistulæ. When he left the hospital, No. 12 (English) bougie readily entered the bladder. Almost immediately he emigrated to the United States of America, lost his metal bougie on board ship, and noted two years later that his stream of urine was assuming smaller dimensions. Three years after operation he sought surgical relief, but no catheter could then be passed into the bladder. He returned to England and re-entered the General Hospital at the end of October, 1886. It was then found that the perineum was much indurated, that the urine was mainly voided through four fistulous openings, and that no catheter could be passed into the bladder. The urine was highly albuminous, and the patient's complexion pale and pasty.

It was necessary to bisect the scrotum and to lay bare the dense fibrous structure, corresponding to the spongy portion of the urethra, from the root of the penis to the bulb. At the end of November he left the hospital with the wound closed, but with no restoration of the channel, all the urine being voided at will, but after the manner of a woman, through a well established fistula, admitting a No. 12 bougie, immediately in front of the triangular ligament.

Cases Suitable for Operation.

When the stricture is so dense as to be practically impassable, whether the result of gleet or traumatism, perineal fistulæ or abscess are frequent complications. In such instances perineal section, in some form, is imperative. As a matter of every day practice, external urethrotomy should not be limited merely to the wholly impassable class. The social status of the patient should be taken into the surgeon's consideration. Amongst the better educated a stricture is well known to have its dangerous side; hence it is seldom permitted to attain perfect impassability. Amongst those who have to be dealt with in hospital practice, a knowledge of things surgical, or it may be, lack of opportunity, is not so frequently met with; hence among such are found the victims of the worst type of urethral stricture. I am satisfied that in those cases admitting only the smallest filiform bougie, Wheelhouse's operation is, in the long run, the speediest and most effectual method of maintaining the patency of the genito-urinary canal.

The merits of the plan advocated by Mr. Wheelhouse may be summed up as follows:

1. It lays down precise rules which, if systematically followed, convert an exceedingly tedious, often a very difficult operation into a comparatively easy procedure.
2. It insures a thorough and visible division of the strictured portion of the urethra from before backwards.
3. With little subsequent, but readily applied, treatment by the patient himself, it affords permanent relief as far as the flow of urine from the bladder is concerned.